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## Using the Concept Attainment Strategy to Enhance Reading Comprehension

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### Abstract

Negative examples of items that do not represent the concept can include images of a numeral, compass, protractor, hand, circle, yard stick, calculator, or telephone. \* Students compare the positive representations of the clock concept that illustrate the linear progression of time and those that are negative representations of the concept. Teachers then render all the students' hypotheses on a whiteboard, flip chart pad, or a visual screen. \* Once the students have completed their list of hypotheses, teachers can assist them in formulating a beginning or basic definition.\n In the final analysis phase, teachers ascertain their students' critical thinking and reasoning abilities by listening to their oral responses or reading their written responses.

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### Full Text

The Concept Attainment Strategy is an instructional technique proposed by Jerome Bruner (Bruner, 1966; Joyce, Weil, & Calhoun, 2004) that targets the "big idea" or concept. The strategy focuses on the meaning or understanding of a concept rather than on what the concept is called. Specifically it develops students' thinking and reasoning skills as they examine concepts from narrative and expository texts. Learners are given specific steps to scaffold their thinking, which include viewing examples as well as nonexamples of a concept. Using inductive reasoning, students are allowed to generalize to other similar and nonsimilar examples before the concept is given a name. With regard to Bloom's (1968) cognitive taxonomy, the technique initially focuses on the comprehension level and then allows students to complete the identification process by determining the name of the concept at the information or memory level. Connections are then made to real-life situations at the application level.

## Rationale

For today's students, a significant benefit for using this strategy is that the focus is not on identifying the name of a vocabulary term or concept but on constructing meaning through referential representation (Just & Carpenter, 1987). Students and even, at times, educators think that if you know what something is called, you understand the meaning of the word. Vygotsky (1986) commented, "A word does not refer to a single object, but to a group or to a class of objects. Each word is therefore already a generalization" (p. 6). Words and concepts are known at different levels (Dale, 1965; Kame'enui, Dixon, & Carnine, 1987; McKeown & Beck, 1988). Understanding the nature of a word or concept from multiple perspectives has value for developing students' reading comprehension, even if they initially cannot correctly verbalize the terminology for the concept presented.

Children enter school with a great disparity in their knowledge and use of vocabulary concepts (Bauman & Kame'enui, 2004; Hart & Risley, 1995). Therefore young learners should be engaged in conceptual experiences that allow vocabulary and reasoning skills to emerge (Snow, Burns, & Griffin, 1998). Developing the language necessary to identify concepts requires teachers to create opportunities for students to practice transferring their understanding of ideas and texts to new learning events (Guthrie et. al, 2004; Villaume & Brabham, 2003). Lessons develop students' abilities to comprehend print through applications targeted to increase understanding of the vocabulary in context (Beck, McKeown, & Kucan, 2002; Nagy & Herman, 1985). To illustrate the development of a vocabulary concept, a sixth-grade teacher increased her students' understanding of symmetry by showing them both symmetrical and nonsymmetrical images. The students were instructed to view and consider the attributes of the images presented and form definitions. The students not only demonstrated their understanding of the concepts presented but were able to successfully transfer their learning to text-based math exercises (Scott, Jamison-Noel, & Asselin, 2003).

The concept attainment strategy illustrated in this article provides teachers with a framework to help their students develop comprehension of words through the use of a structured thinking and reasoning process that involves confirming or altering their views in ways that are meaningful to them. Teachers can use this strategy to teach vocabulary concepts embedded in narrative and expository texts. This strategy gives teachers a structure they can use to activate their students' knowledge base and enable them to make their own connections to print and real world experiences. By beginning with a basic example and then expanding upon it, students practice relating the known to the unknown. This allows them to better understand the distinctions of word concepts that have a multiplicity of applications (Marzano, Pickering, & Pollock, 2001; Nilsen & Nilsen, 2003).

## Application for Primary Learners Using a Narrative Text

The three phases of this strategy allow students to follow an inductive sequence, drawing conclusions through a group exploration of the concept presented. In phase 1 of the strategy, the students examine the concept and form a hypothesis about its attributes. During phase 2, students test and confirm their idea and learn the name of the concept presented. Finally, in

phase 3, the students analyze the thinking strategies they used to derive the new concept (Holt & Kysilka, 2006; Joyce et al., 2004).

#### Phase 1: The Concept to Be Taught Is Clock

Teachers do not reveal the concept to the students in advance; instead students engage in inductive reasoning to determine it themselves. Although the concept of clock is simple even for young children, this strategy targets teaching related words that are perhaps un-known; thus it could even be used with older students to increase their vocabulary and to enlarge their understanding of the concept of clock and how a clock differs from other measurement instruments. The following steps are included in phase 1.

- \* Teachers show the students several different pictures of clocks or time pieces and also show images other than clocks. Positive examples of items that represent the concept can include pictures of a watch, stopwatch, digital clock, alarm clock, analog clock, wall clock, grandfather clock, or unusually shaped clocks. Negative examples of items that do not represent the concept can include images of a numeral, compass, protractor, hand, circle, yard stick, calculator, or telephone.
- \* Students compare the positive representations of the clock concept that illustrate the linear progression of time and those that are negative representations of the concept. After presentation to the students, pictures can be grouped together or sorted into a yes box or a no box.
- \* Following the viewing of the final image, students can create a list of best guesses about the concept. They may describe the concept being discussed as things that tell time, things with numbers, big hand movement, hours, or watches. Teachers then render all the students' hypotheses on a whiteboard, flip chart pad, or a visual screen.
- \* Once the students have completed their list of hypotheses, teachers can assist them in formulating a beginning or basic definition.

#### Phase 2: Testing Attainment of the Concept of Clock

In phase 2, the teacher leads students through the following steps.

- \* Teachers present additional unidentified and unlabeled examples and nonexamples of the concept of clock. Students respond to the pictorial examples by deciding whether the example shown is an example of the hypothesis they created. Further examples may include items such as a fancy wristwatch, kitchen timer, an old fashioned pocket watch, a digital stopwatch, or the kind of clock face that shopkeepers put in their door to indicate when someone will return. Nonexamples could include such objects as metronomes, knitting needles, speedometers, triangles, tape measures, or pressure gauges.
- \* Teachers then confirm the students' hypothesis by restating their definition or the characteristics of the concept. Following the last example shown, teachers can identify the name of the concept for the students and connect their descriptions and definitions with the actual term clock.
- \* Teachers can then read the story Hickory, Dickory, Dock (Muller, 1992) to the class. Students are invited to look among the illustrations to find more examples of clocks on each page. They can also be given the opportunity to describe the clocks in their own lives such as

the clock in the school cafeteria or the clocks hanging over their teachers' desks.

### Phase 3: Analysis

In the analysis phase, the following steps are undertaken by the students.

- \* Students describe how they came to formulate their hypothesis of the concept of clock. In their own words they will have come to the conclusion that clocks are instruments that people use to view the linear progression of time.
- \* Students discuss the attributes from the original pictures that helped them form their hypotheses of the definition of clock. Employing both the visual and auditory senses imprints a strong connection in the students' minds between the concept, the vocabulary, and the language that is used to identify the concept.
- \* Students discuss why some of their initial hypotheses about the meaning of the word clock were either correct or incorrect and what they have learned about the many different forms that a clock can take.

### Application for Intermediate Learners Using an Expository Text

The use of words and phrases in place of pictures and concrete objects is an appropriate variation for middle-level learners. Allowing students to write responses during the strategy session supports the development of the students' thinking and reasoning processes (Purcell-Gates, Duke, & Martineau, 2007).

### Phase 1: The Concept to Be Taught Is American Symbols

Students view words and phrases on flash cards or sentence strips that represent American symbols. Along with each symbol shared, another word or phrase is shown that represents something that is not recognized as a national symbol. Samples of symbolic words and phrases related to America could include American flag, American coin, bald eagle, Statue of Liberty, or Great Seal of the United States. Nonexamples of symbols could include words and phrases such as United Nations building, equal rights, giant sequoia, New Mexico, or Windsor Castle. The following steps occur in phase 1.

- \* The students compare the words and phrases representing American symbols with the other words and phrases viewed. As students identify the related ideas, teachers can assist them by placing the words into categories on a whiteboard or in a yes box or a no box.
- \* Following the viewing of the words, students write descriptions or individual hypotheses about the concept. Their descriptions may include words such as our country, important things, related to government, or history.
- \* After the students complete their initial description or hypotheses, teachers can help them formulate a definition.

### Phase 2: Testing Attainment of the Concept American Symbols

In phase 2, the teacher helps the students refine their knowledge through the following steps.

- \* Additional words and phrases representing examples and nonexamples of the concept of American symbols are then shared with the learners. Students respond to the words by deciding whether the words shown support their hypotheses. Further examples might include phrases such as Liberty Bell, Washington Monument, or Uncle Sam. Nonexamples could include continent, embassy, or Canadian flag.

- \* Teachers allow their students to read their written responses. Teachers then confirm their hypotheses by repeating their definitions or the characteristics of the concept. Following the last words viewed, teachers identify the name of the concept for the students and connect their definitions with the concept of American symbols.

- \* The book *Symbols of America* (Ahearn, 2004) is then read by the class. To expand their students' understanding of this concept, teachers can assign them enrichment activities that allow them to locate pictorial representations of state, county, or city symbols using online search engines, books, pamphlets, and encyclopedias.

### Phase 3: Analysis

In the analysis phase, students discuss their learning process through the following steps.

- \* Students share the metacognitive processes they experienced from viewing the words or phrases that enabled them to form their hypotheses of the concept of American symbols.

- \* Students discuss why some of their initial hypotheses were either correct or incorrect and talk about different symbols used in America to represent the culture.

- \* Students engage in analyzing the types and number of hypotheses shared in the learning experience.

### Strategy Assessment

Assessment and evaluation are integral parts of the Concept Attainment Strategy. Teachers practice observational assessment throughout each phase of the strategy lesson. Students do not progress to the next phase until the prior phase is attained at the developing level (see Table 1). During the presentation phase, teachers determine whether their students have identified and defined the critical attributes. During the testing phase teachers listen to students share their written and oral connections and allow them to formulate real-world applications. In the final analysis phase, teachers ascertain their students' critical thinking and reasoning abilities by listening to their oral responses or reading their written responses. After students have completed the three phases of the Concept Attainment Strategy, teachers can check to see if all children have grasped the concept by instructing them individually or in groups to complete follow-up activities. Examples of activities could include allowing students to create their own ideas related to the concept studied by asking them to explain the concept in their own words; generate a list of ideas and thoughts that might include synonyms, examples, or applications of the concept; draw illustrations related to the concept; or complete graphic organizers to show the relationship of the concept to the examples and nonexamples presented (Holt & Kysilka, 2006).

### Differentiated Instruction

The Concept Attainment Strategy is especially useful for instructing English-language learners (ELLs), pupils with special needs, and gifted students. Vocabulary words for concepts that ELLs are familiar with in their first language can be taught through the use of culturally relevant pictures and concrete objects. Many pictures related to the students' first language and culture can be obtained through the Internet or located in print materials. These pictures can be used to activate the knowledge of concepts understood in the ELL's first language and to develop language for the concepts in the ELL's second language.

Pupils with special needs benefit from using this strategy as it provides vocabulary development from multiple viewpoints. Teachers may choose to add additional visuals in the form of graphic organizers such as contrast charts or Venn diagrams to assist students in visualizing the conceptual relationships between the vocabulary words or phrases presented. Gifted pupils can use this strategy to learn facets of abstract concepts such as democracy, truth, or collaboration by reading and discussing short vignettes or speeches that illustrate positive and negative examples of the concept. Inquiry-based activities can be constructed to allow students to investigate a concept related to the history of a symbol, a movement, or an event. A variety of texts can be examined for the purpose of allowing students to clarify and expand their comprehension of the ideas presented.

#### The Concept Attainment Strategy Creates Lasting Knowledge

Because thinking and reasoning occur on multiple levels, learners benefit from the opportunity to examine concepts through examples and nonexamples that highlight different aspects of the concept presented. Connecting what is known to what is unknown is the basis of developing concept attainment. The Concept Attainment Strategy can be used with students of all ages, ELLs, pupils with special needs, and gifted students. It can be applied in many contexts to develop comprehension using narrative or expository trade books, pictures, words or phrases, and concrete objects. In the experience of the authors, students who have mastered concepts taught during the learning events are able months later to verbalize and give examples of the concepts.

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#### Author Affiliation

Boulware teaches at Middle Tennessee State University, Murfreesboro, USA; e-mail [boulware@mtsu.edu](mailto:boulware@mtsu.edu). Crow teaches at the University of Texas at Arlington, USA; e-mail [mlcrow@uta.edu](mailto:mlcrow@uta.edu).

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